Stream Advocate

Riverways/Adopt-A-Stream Program Newsletter *April 2001*

ADVOCATING FOR BETTER RIVER FLOWS

Water Use and Stewardship

The effect water use has on water levels in streams and rivers has become one of the more troubling issues facing river advocates. Water suppliers - concerned about quantity and quality of future water - have recently partnered with Stream Teams, with Watershed Teams, and with civic organizations such as the League of Women Voters to educate people about water conservation and homeowner stewardship. Water use does not have to come at the expense of our rivers and wildlife. Foresight and cooperation between water departments and homeowners can help prevent shortages and dry riverbeds.

During the summer months water use and evapotranspiration are at the highest levels of the year, while precipitation is low. Watering lawns is one of the most water intensive summer activities in many communities, forcing towns and cities to regulate the amount of outdoor water use through watering bans. With or without normal rainfall, the issue of water use is here to stay. As we continue to lose open space and build houses with lawns, water departments and conservationists are going to be faced with the question of where to get water for human use and ecosystem sustainability. Many Stream Teams are developing water conservation education materials and promoting natural lawn care. This issue of *The Stream Advocate* will attempt to provide some information for Stream Teams to use in water conservation education and outreach efforts within their communities.

> Massachusetts actually has enough annual rainfall to support the needs of most mature lawns without additional homeowner watering.

River Flows and Water Use. Is there really a problem?

Nature's balance is challenged by our uses of water, some of which are necessary, and some that are excessive. River advocates understand the importance of adequate seasonal flow for our rivers. The ecological health of rivers depends upon seasonal high flows. Wetlands hold water in wet seasons and release it in the summers when rivers are dry and fish and wildlife require more water. Maintaining an adequate quantity of water in rivers is as critical to their natural integrity as is clean water. Withdrawals from wells result in decreased volumes and disruptions of natural flow patterns in rivers and streams. Additionally, the dewatering of wetlands caused by withdrawals can be as harmful to the water-dependent organisms as the more conventional forms of wetland alteration.

Misconceptions surrounding water remain. Many homeowners justify their water consumption because they have a private well for outdoor irrigation, not fully understanding the connection between their well and the groundwater system from which they draw the water. Not only are they using water that otherwise would be filtering into the river, but they are also not subject to municipal water bans or water rates. Many people think there is not a problem with water levels this year because of the significant rainfalls since last spring. Even during the relatively wet summer of 2000, communities enforced water bans because there was not enough water to meet demand.

According to Lou Wagner of the MA Audubon Society "much of the problem is due to the manner in which we use water. Water use often doubles or triples in summer when vast quantities are used for lawn irrigation, straining the capacity of water supply, treatment and distribution systems. Unfortunately this high demand occurs just when our rivers and streams are naturally at their lowest annual flows and can least afford to provide the water. As water use soars to keep lawns green and growing, rivers, streams and wetlands are dried up, and fish and other aquatic organisms are left to die. The green lawns of summer come at a high environmental price."

Solutions:
Partnering with Water Departments

At least 100 communities enforced a municipal water ban during the summer of 1999. Rain levels in April of that year were the lowest in 105 years of record. It has become more evident that water districts are potential partners for river protection, as they are already educating people about water issues, although not necessarily river issues. The water districts and water companies throughout the state are holding conferences on water conservation, promoting water quality, sending out town-wide mailings, participating in Stream Team and Watershed Team Meetings, and creating demonstration gardens. Wayne Southworth, who is both the Superintendent of the Easton Water Department and the founding president of the Canoe River Aquifer Advisory Committee has said that the intent in establishing water departments was to provide a safe supply of drinking water. Never were water depart-

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See the upcoming Riverways Newsletter for information on:

- Secretary Durand's new Lakes and Ponds Initiative
- Urban Rivers Update
- Stream Team Updates
- Native Riparian Plan List
- Partnering to open a universal access site
- Loads of Resources and Grants

and more...

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ments intended to become "irrigation" departments, devoted to irrigating- watering- our lawns.

Under the Federal *Safe Drinking Water Act*, Water Departments and Companies (in communities over fifteen units) must mail out information to their customers. Some Water Departments are sending out articles written by Stream Teams in this mailing. Consider meeting with water departments and developing information on stewardship and water use to send out to this large audience. Please feel free to use any of the information in this *Stream Advocate* in your brochures, web pages, letters to the editors and in your other activities. Share your success stories on our stewardship web page and inspire others.

Conservation Education & Advocacy

Watershed associations and Stream Teams have been working hard to make connections between water use and river flow.

· For several years, the Ipswich River Watershed Association has sponsored "Water Wise Awards" where residents in the watershed compete for low water use. They have given prizes of $100 for first prize; $50 for second prize and $25 for third prize. In 1997, the first place winner used 13 gallons/day; the second place, 16 gallons/day; and the third place, 24 gallons/day. Decreased use was attributed to (in one case) composting toilets, rain barrel gardens, water-efficient toilets and showerheads and limiting lawn watering.

· The Acton Stream Team, the Organization for the Assabet River and the Acton Water Department held a "Ecological Landscaping Program" workshop focusing on water conservation and stewardship in gardens and lawns.

· The Charles River Watershed Association has water conservation tips on its web site for individuals, municipalities and businesses. See www.crwa.org/waterconserve.htm.

· Some Ipswich River Stream Teams have planned Xeriscaping- dry landscaping- Model Gardens.

· Some Stream Teams and Watershed Associations have written letters to the editor highlighting concerns over water use. See our webpage for an example letter to the editor by the Neponset River Watershed Association on water conservation.

· Parker River Clean Water Association ran a program on buffer gardens in Spring of 1999.

· A Shawsheen Stream Team wrote a homeowner brochure for residents in the watershed.

· Miscoe Brook Stream Team worked with the Blackstone Valley Regional Vo-Tech School to create a homeowners brochure for Miscoe Brook residents. The brochure was sent to all residents in the watershed.

· Canoe River Aquifer Advisory Committee, partnering with some of its member water departments, sponsored a series of water conservation forums using funding from a Riverways Small Grant.

Reducing outdoor water consumption

Massachusetts actually has enough annual rainfall to support the needs of most mature lawns without additional homeowner watering. Because lawn care and landscaping is a choice that landowners make, education on alternative landscaping techniques can make a difference. Native plants are more adapted to summer dryness often associated with New England summers thus requiring less watering. Lawns also are a monoculture and do not provide habitat for birds and wildlife.

Water departments in several towns have said that newer houses are using more water because of increasing lawn size, in ground sprinkler systems and timed systems. According to the American Water Works Association, 20-50% of homeowner water use is for outdoor landscaping. To deal with the increased use, some towns, such as the Town of Sharon, have instituted a limit on the size of lawns for new houses, while other water departments, such as Easton Massachusetts are stressing education and not regulation. In 2000, the town of Franklin imposed a mandatory once-a-week maximum on water beginning May 1st. Violators faced a fine of $200. The town was also working on a pilot project to discharge storm water into the ground and at least partially recharge the aquifer with water that would normally be treated at Deer Island and discharged into Boston Harbor. Hopkinton had an odd/even watering ban last summer, advising residents of predictions for a dry summer. Some towns were even more proactive and have actually changed town bylaws to reflect changing awareness. In Sharon, a zoning bylaw puts into place Coverage Limits in two districts, and another bans irrigation systems in "Natural Vegetative Areas".

Conservationists need not find themselves at odds with homeowners desiring a beautiful yard. Better planning of lawns and gardens can reduce watering and lower maintenance cost over time. Perceptions about lawns need to change.

Facts about lawns

· Turf grass is very fast growing. It has a great deal of surface area for evapotranspiration.

· A relatively small lawn (5000 square feet) can use up to 6000 gallons of water/week.

· Massachusetts has enough rainfall to naturally supply the water needs of most mature lawns without the need for watering.

· Mature lawns that go brown during summer heat are in a natural period of dormancy. They will green up when wetter, cooler weather returns.

· Too much water harms lawns more than too little.

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The Ipswich Headwaters Stream Team leads a walk in the dry riverbed to spread the word about the impact of water use on the river. Summer 1999. Photo by Daniele Lantange

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· Over-watering deprives roots of oxygen, weakens the grass and promotes disease.

· Over-watering causes the roots to stay near the surface, thus requiring more watering and leading to a weakened lawn.

· If you must have a lawn, use a drought-resistant seed (fescue is good). Turf-type tall fescue grasses look like Kentucky Bluegrass and grow in sun and shade. This grass requires much less water and recovers much better than Kentucky Bluegrass.
(Information from the Acton Water Department's Water Works, Spring 2000; Wayne Southworth of the Easton Water Department.)

Hints for conservation and lawn care
The following actions lower water use, are more diverse, better for wildlife, require less maintenance, provide shade, are more visually interesting and can add value to your property.

· Water your lawn only when it needs it. Step on the grass. If it springs back when you walk on it, it does not need water.

· Train your lawn to have deep roots and be drought tolerant. Deep infrequent watering encourages root growth.

· Water only on demand and water early in the morning to reduce evaporation.

· Mow lawns high and often. Set the lawn mower blades at 3 inches. Leave the grass clippings on the lawn. If you mow when the grass is four inches, the clippings will not mat and they will provide fertilizer for the lawn.

· Reduce the size of your lawn. The Acton Water Departments suggests "Water Wise Gardening". Allow some of the yard to grow naturally for wildlife. Or create mulched native perennial beds. If you do only one thing, reduce the size of your lawn.

· In the same way that too much water weakens our lawns, too much fertilizer does the same. Organic gardeners choose non-chemical fertilizers. Experts say if you are going to use chemical fertilizers, you should use them only after a soil test, use them sparingly in the fall, and use a slow release fertilizer so that it doesn't run off your property into aquifers, storm drains and into rivers and ponds. In other words, more is not better. If soil particles cannot absorb fertilizer right away, those rainstorms wash excess fertilizer into our streams. Get a soil test at UMass Extension Service and water according to soil. Call them at 413-545-2311 or go on the web at www.umassgreeninfo.org/services/soil_testing.html.

· Choose plants adapted to New England's soil and moisture levels;

· Add organic material to the soil (compost, well-rotted manure).

· Group plants with similar needs so that you reduce watering.

· Add buffers to areas of runoff to increase absorption.

· Plant in the Spring and Fall when soil is naturally moist and less watering is required.

Xeriscaping

There are other ways for homeowners to reduce the amount of water they use besides simply watering less. Several water departments and watershed associations have created prototype xeriscape gardens. Xeriscaping is a type of landscaping that uses less water than traditional landscaping. Xeriscaping is neither expensive nor does it involve planting cacti. It is a different way of planting that allows nature the do the watering after the homeowner does the planning. Southworth comments "With the price of water going up and water bans going into effect when drought conditions prevail, its worth the time and effort to create landscaping that doesn't rely on irrigation."

The key to effective Xeriscaping is long roots, and according to Southworth, you can train grass and shrub to reach deep into the soil and use nothing but rainfall. As you 'train" the roots to reach deep into the soil, water only once every 10 days allowing the water to penetrate deeper soil. Plants should be grouped by water needs. Planting a low water plant next to a high water plant results in over-watering one, and under-watering the other. *See box for more on Xeriscaping.*

What is Xeriscaping?

Xeriscaping (Zir'-I-scape) water efficient landscaping.

Traditional landscaping tends to consume an unnecessary amount of water, while Xeriscaping results in an attractive, sustainable landscape that conserves water. Developed in 1981 by the Denver Water Department, the term Xeriscaping refers to a way to landscape despite water shortages.
Seven Basic Principles of Xeriscaping:

1. Planning and Design
2. Practical Turf areas
3. Appropriate plant selection
4. Soil analysis
5. Use of mulches
6. Efficient irrigation
7. Appropriate maintenance

Xeriscaping is not…

- Anti-lawn
- It is not cactus and gravel gardening: Zero-scape.
- Does not involve using gravel in plant beds. Gravel can often increase soil temperature and the need for more water.

For more information and articles on Xeriscaping see the resource listing in this newsletter.

Don't let that water go down the drain!

Don't water impervious surfaces (roads, driveways). It will run rapidly to storm drains, unnecessarily going to treatment plants and in most cases directly into our rivers, carrying with it sediments and pollutants. Divert that water and put it to good use.

· Divert your storm water run-off onto your lawn and get the most water for every rainstorm. This also keeps it out of storm drains, which can flood sewer lines.

· Mulch planting beds with newspaper, leaves, bark, or wood chips. Mulches retain soil moisture and improve soil quality.

· Water your plantings with a soaker hose or a drip irrigation system. Less water evaporates this way than with a sprinkler, and you target your watering.

· Use a timing device with any watering system.

· Use "wasted" water for your plants. A rain barrel or cistern that captures rainfall from your roof is a great garden reservoir. In some areas, gray water —water from bathing or washing clothes —can legally be diverted to garden use.

· Don't use black plastic in flower beds as it reduces water absorption and increases water, soil and fertilizer runoff.~

UPCOMING EVENTS

National River Cleanup Week May 12-19th. Register your cleanup, www.americaoutdoors.org/nrcw

June is Rivers Month. Plan an event to highlight your river! Look for an announcement in the upcoming Riverways Newsletter on how to list your event in our Calendar.

Biodiversity Days June 8, 9 & 10. Join others around the state to discover and record what plants and animals live your community. Now in its second year, learn more about this EOEA program on their webpage www.state.ma.us/envir/biodays.htm, or by contacting Cindy Cormier (cynthia.cormier@state.ma.us or 626-1116).

The **Adopt-A-Stream Program** works to support and encourage local stream teams and communities in efforts to protect and restore the ecological integrity of the Commonweath's watersheds; rivers, streams and adjacent lands.

For more information or to receive our newsletter, please contact:

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Also check out our web-site:
http://www.state.ma.us/dfwele/river/rivaas_toc.htm

Riverways Programs, Joan Kimball, Director
Department of Fisheries, Wildlife and Environmental Law Enforcement, David M. Peters, Commissioner
Executive Office of Environmental Affairs, Bob Durand, Secretary

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STREAM TEAMS ACROSS THE STATE

Streams Teams are continuing to do excellent work all around Massachusetts.

Finalizing their Action Plans are: the Otter River Stream Team *(Gardner/Templeton)*, Tully River Stream Team *(Athol/Roylston/ Orange)*, Smallpox Brook Stream Team *(Salisbury)* and First Herring Brook Watershed Initiative *(Scituate).*

Receiving their Adopt-A-Stream Award and continuing to work on River protection are River Aware II on the Cole and Lees Rivers in *Swansea* and *Somerset* and Alewife Brook Stream Team in *Cambridge*.

Surveys planned for the Spring include, Weweantic River *(Carver and Wareham),* Gravelly Brook in *(Ipswich)*, Aberjona River *(Winchester and Woburn)* and Coles Brook *(Seekonk)*.

Read Stream Teams updates in the Riverways Newsletter for more details on Stream Teams across Massachusetts.

Surveying a large culvert on Smallpox Brook, members of the Stream Team walk their section during the September 1999 survey.

WATER USE AND STEWARDSHIP RESOURCES

Water Conservation
A clearinghouse of water efficiency information is available at www.waterwiser.org. Use their drip calculator to find out just how much water a leaking faucet might be costing you.

EPA, Cleaner Water through Conservation may be viewed online at www.epa.gov/OW/you/intro.html. This site explains the relationship between water quantity and quality.

Habitat Conservation
Stein, Sara. *Noah's Garden: Restoring the Ecology of Our Own Backyards,* Houghton Mifflin Co. 1993.
Planting Noah's Garden: Further Adventures in Backyard Ecology, Houghton Mifflin Co. 1997.

Simple ways to increase your own backyard habitat for plants and critters. www.nwf.org/habitats/backyard/program.cfm

Natural Resource and Conservation Services Backyard Conservation page with hints for better homeowner conservation and management. www.nhq.nrcs.usda.gov/CCS/Backyard.html

National Arbor Day Foundation. Learn about programs to encourage tree planting in your community. www.arborday.org

Natural Resource and Conservation Service information on the importance of buffers in maintaining healthy streams. www.nhq.nrcs.usda.gov/CCS/Buffers.html

Lawns and gardens
MA DEP *Lawns and Landscapes in Your Watershed*. An excellent short paper. 1998. www.state.ma.us/DEP. Or call 617-574-6872.

New England Wildflower Society. Information on their web page includes native and invasive plant resources, wildflower plant sales and their catalog that describes plants and moisture needs. www.newfs.org

Xeriscaping information and videos available for a fee from the American Water Works Association. www.awwa.org/xeriscape.

Xeriscaping articles available at http://landscaping.about.com

Water Conditions/droughts
Current water conditions from US Geological Survey, including streamflow, drought conditions and historical data. http://ma.water.usgs.gov

Office of Water Resources Rainfall website includes precipitation reports and links to other resources. www.state.ma.us/dem/programs/rainfall

National Drought Mitigation Center- resources and links for drought. http://enso.unl.edu/ndmc

Our website contains further suggestions for related web-links, grants, Frequently Asked Questions, Fact Sheets, downloadable survey data sheets and our Leader's Manual. www.state.ma.us/dfwele/river/rivaas_toc.htm

BORROW A VIDEO FOR YOUR NEXT MEETING OR EVENT!

Riverways has several short educational videos available for Stream Teams to borrow. If you are going to have a display at a spring or summer river festival, bring along a video about backyard composting or "Don't Trash Grass", a twelve minute video about lawn care practices. These are suitable for continuous play where passers-by can stop and be educated while picking up more information about your group. Videos can also be used at educational workshops or outreach events. You may even want a video for a monthly Stream Team meeting to help generate ideas and action. A full listing is on the Riverways website. Here is a list of some of our videos:

Don't Trash Grass – 12 minute video on more ecological lawn care. Connecticut DEP

Turning Your Spoils to Soil – 17 minute video on homeowner composting. Connecticut DEP

After the Rain: Urban Runoff- 30 minutes exploring explores the importance of water, the pressures our cities are placing on this precious resource, and ways that individuals can protect local drinking water supplies. 30 minutes, Oregon State University Extension.

Urban Stream Restoration – 61-minute video of all the processes involved in urban stream restoration. NolteMedia video documentary.

Ecosystems: Natures Web of Life –19 minute video for students explores ecosystem diversity. Developed by the Partners in Resource Education, a federal programs partnership.

Restoring our Wetlands – Healing our Watersheds is from the Wetlands Restoration and Banking Program of the Executive Office of Environmental Affairs. The video explains why wetlands are important, what happens to them and why we need to restore them, and gives examples from Massachusetts of wetlands restoration projects. 13-minutes.

GET CONNECTED: MASSACHUSETTS WATERSHED COALITION LIST SERVE

The Massachusetts Watershed Coalition is a collaboration of local organizations that are committed to the protection, sound management and enhancement of Massachusetts's rivers and watershed ecosystems. The Coalition's list serve is for anyone interested in environmental news in the region. Subscribers are encouraged to participate in posting useful information to the list, such as upcoming events or calls to action. Current subscribers includes state employees, citizens, and watershed associations across the state. Weekly postings are concise, and subscribers are encouraged to post information as often as they wish.

People can subscribe to the MWC list in any of three ways: 1) go to their homepage at *www.commonwaters.org* and click on the subscribe link; 2) send a blank email to *mwc-list-subscribe@igc.topica.com*; or 3) call the coalition at (978) 534-0379 and asked to be signed up.

Go one better and join the MWC and connect your group with resources. Check out what they have to offer on their webpage or give them a call.

LAWNS SOAKED IN MARCH - BY AUGUST THEY'RE PARCHED!

Concerned about depletion of water supplies due to increased lawn irrigation during the summer months, the Commonwealth's Water Resource Commission has created a Lawn Water Conservation Program. Looking ahead to the gardening season and possible summer droughts, the Water Resources Commission is advocating for more efficient water use habits, both inside and outside homes. Some of the recommendations that they are publicizing:

- Minimize lawn size
- Choose native plant species
- Water only when necessary
- Don't install irrigation systems in water short communities
- Install rain shutoff devices on automatic irrigation systems
- Collect and reuse water for landscaping needs
- Mow lawns at the highest possible height for your mower.

For municipalities experiencing water shortages in the past due to lawn irrigation, the Commission is also recommending that a bylaw be passed to ban automatic irrigation systems or require shutoff devices for automatic systems.

For more information or comments on these recommendations, call Jackie Murphy at EOEA, 617-626-1179.

RECONNECT WITH ADOPT-A-STREAM STAFF

If your Stream Team is working on a new issue, or planning a new focused survey, call Adopt-A-Stream Staff for suggestions or assistance. Staff is available to attend meetings when it is helpful. If we haven't heard from you in a while, please drop us a line to let us know about the great work you are doing.

DID YOU KNOW...

...the Massachusetts Water Resources Authority (MWRA) proposed diverting part of the Connecticut River into the Quabbin Reservoir to meet increased water demands in the early 1980's? Water use at the time was up to 300mg/day and the reservoir could run at a maximum capacity of 330mg/day, which did not leave enough for emergency needs. Repairing pipe leaks and an aggressive campaign to educate the public on water use and conservation brought the daily use down to 250mg/day and solved the problem without diverting the precious resource of the CT River. Repair and construction efforts save 70mgd.

NEW ADOPT-A-STREAM PROGRAM COORDINATOR

Rachel Calabro has been appointed as the new Adopt-A-Stream Coordinator. Rachel brings her experience as Stream Team Technical Assistant and background in geology to the position. Together with Stream Team Organizer, Amy Singler, the program will continue to focus on new Stream Team development and action implementation with existing Stream Teams.